

**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554**

In the Matter of	)	
	)	
	)	
Aeronet Global Communications Inc.’s	)	RM- 11824
Petition for Rulemaking to Amend	)	
the Commission’s Allocation and Service Rules	)	
for the 71-76 GHz, 81-86 GHz, and 92-95 GHz	)	
Bands to Authorize Aviation Scheduled	)	
Dynamic Datalinks	)	
	)	
	)	
	)	
Aeronet Global Communications Inc.’s	)	RM-11825
Petition for Rulemaking to Amend	)	
the Commission’s Allocation and Service Rules	)	
for the 71-76 GHz, 81-86 GHz, and 92-95 GHz	)	
Bands to Authorize Maritime Scheduled	)	
Dynamic Datalinks	)	

**COMMENTS OF LOON LLC**

Loon LLC (“Loon”) is pleased to submit comments in support of Aeronet Global Communications Inc.’s (“Aeronet”) Petition for Rulemaking in the above-captioned proceedings.

<sup>1</sup> Specifically, Aeronet requests that the Federal Communications Commission (FCC) initiate a rulemaking to amend its allocation and service rules for the 71-76 GHz, 81-86 GHz, and 92-95

---

<sup>1</sup> See Aeronet Global Communications Inc.’s Petition for Rulemaking to Amend the Commission’s Allocation and Service Rules for the 71-76 GHz, 81-86 GHz, and 92-95 GHz Bands to Authorize Aviation Scheduled Dynamic Datalinks, RM-11824, Public Notice, dated February 7, 2019 (“Aviation Petition”). See also Aeronet Global Communications Inc.’s Petition for Rulemaking to Amend the Commission’s Allocation and Service Rules for the 71-76 GHz, 81-86 GHz, and 92-95 GHz Bands to Authorize Maritime Scheduled Dynamic Datalinks, RM-11825, Public Notice, dated February 7, 2019 (“Maritime Petition”) (collectively, “the Petitions”).

GHz spectrum bands (collectively the “E-Band” or the “Band”) to authorize the use of aviation and maritime scheduled dynamic datalinks (“SDDLs”), as described in its respective petitions.<sup>2</sup>

## **I. Introduction**

Loon, an independent business within Alphabet, is working to bring balloon-powered Internet access to unserved and underserved communities around the world. Loon’s unmanned, high-altitude balloons are capable of months-long flights at altitudes of approximately 20 kilometers. To date, Loon balloons have travelled more than 58 million kilometers across 6 continents. They are equipped with energy-efficient communications equipment that uses standard LTE frequencies for the user access links, and the E-band, and/or 5 GHz unlicensed spectrum for backhaul/feeder links. Each Loon balloon can provide service using standard LTE frequencies to terrestrial UE’s that cover an area over 5000 square kilometers. In addition, Loon has demonstrated use of E-band to form links across more than 1000 kilometers using a string of E-band links across 7 balloons.<sup>3</sup>

## **II. Loon Supports the Aeronet Petitions With Some Clarification**

Loon supports Aeronet’s goals of unlocking the “Internet of the Sky” and the “Internet of the Sea” for the myriad consumer and public interest benefits that are described in both the Aviation Petition and the Maritime Petition.<sup>4</sup> Loon, therefore, offers its support of Aeronet’s Petitions, while simultaneously requesting that the Commission clarify two important issues so

---

<sup>2</sup> *Id.*

<sup>3</sup> See <https://medium.com/loon-for-all/1-connection-7-balloons-1-000-kilometers-74da60b9e283> (last visited March 11, 2019).

<sup>4</sup> See Aviation Petition, at 1; see Maritime Petition, at 1.

that Loon and other stakeholders may fully deploy our services in accordance with Aeronet's proposed rule modifications. Loon seeks clarification on the issues set forth below.

**A. Scheduled Dynamic Datalinks (SDDLs) and Related Terminology  
Should Be Applied Uniformly to All E-Band Users**

In the Petitions, Aeronet describes scheduled dynamic datalinks (SDDLs) as “an innovative application of a technology that certain industries and the military have long used to transmit large volumes of data over long distances by establishing point-to-point networks with narrow-beam spectrum.”<sup>5</sup> Specifically, in its Aviation Petition, Aeronet requests that the Commission modify its rules “expressly to authorize Aviation Scheduled Dynamic Datalinks as a ‘fixed service’ and ‘permissible operation’ in the E-Band.”<sup>6</sup> In its Maritime Petition, Aeronet requests that the Commission modify its rules “expressly to authorize Maritime Scheduled Dynamic Datalinks as a “fixed service” and “permissible operation” in the E-Band.”<sup>7</sup> In addition, Aeronet refers to Scheduled Dynamic Datalink Relay.<sup>8</sup>

Loon is not aware of the terms SDDL, Aviation SDDL, Maritime SDDL, or Scheduled Dynamic Datalink Relay as standardized terms or technologies that apply to its own service deployment in the spectrum bands that are the subject of Aeronet's present Petitions. Loon, therefore, requests that the Commission uniformly apply *all* proposed rule modifications to *all* users of the E-Band. It is possible that the Loon service will encompass these terms, but it presently does not identify its service with these specific terms. While Loon supports Aeronet's Petitions, we oppose any rule modifications that could favor Aeronet's use of the of the E-Band or restrict operation by other users.

---

<sup>5</sup> See Aviation Petition, at 3; see Maritime Petition, at 2.

<sup>6</sup> *Id.* at 28.

<sup>7</sup> Maritime Petition, at 26.

<sup>8</sup> *Id.*

## **B. Altitude**

Loon's service operates at altitudes of approximately 20 kilometers, while other similar platforms operate up to approximately 30 kilometers. Loon, therefore, requests that the altitude limits requested in the Aeronet Petitions be extended to ensure that Loon and others may fully operate at their designated higher altitudes. Loon further requests that in addition to ensuring that any rule modifications cover Loon's service at approximately 20 kilometers, that the Commission also include High Altitude Platform Stations ("HAPS") in any altitude limits to ensure continued operations of any HAPS service.<sup>9</sup>

## **Conclusion**

Loon believes that Aeronet's proposed E-Band rule modifications will result in significant consumer and public interest benefits. Loon supports Aeronet's Petitions, while requesting that the Commission provide clarification on SDDL and altitude limits so that all users of the E-band have equal access to this valuable spectrum.

Respectfully submitted,

s/s Julie M. Kearney

Julie M. Kearney  
Head of Regulatory Affairs  
Loon LLC  
1600 Amphiteatre Parkway  
Mountain View, CA 94043  
650.253.3417

March 11, 2019

---

<sup>9</sup> The International Telecommunications Union ("ITU") defines High Altitude Platform Service ("HAPS") as: "a station on an object at an altitude of 20 to 50 km and at a specified, nominal, fixed point relative to the Earth." *See* Article 1.66A, Radio Regulations, ITU.